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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Mitsuma Ooishi

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7590

02/12/2004

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EXAMINER

HODGES, MATTHEW P

ART UNIT

PAPER NUMBER

2879

DATE MAILED: 02/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/975,929

Applicant(s)

OOISHI ET AL.

Examiner

Matt P Hodges

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-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14, 16 and 18-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 and 18-26 is/are rejected.
- 7) ☐ Claim(s) 14, 16, 27 and 28 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

The Amendment, filed on 10/15/2003, has been entered and acknowledged by the Examiner.

Cancellation of claims 15 and 17 has been entered.

Drawings

The drawing corrections were received on 10/15/2003. These drawings are accepted.

Claim Objections

Claims 1-14, 16, and 18-28, are objected to because of the following informalities:

Regarding claim 1, the term "to be a front electrode in a display area" is unclear as to what is to be a front electrode. The phrase "To be a front electrode in a display area" follows the description of the organic thin film however is likely not describing the organic thin film. If the intention is that the transparent electrode is to be a front electrode then the description should be placed on the previous line to avoid confusion. Therefore for the purposes of examination it is assumed that the transparent electrode formed on the transparent substrate is the front electrode.

The same error is duplicated in claims 2, 14, 24, and 28.

Claims 3-13, 16, 18-23, and 25-27 are objected to as being dependent on the claims objected to above.

Regarding claim 1, "to be leading wire" appears to be missing the word "a" to therefore read, "to be a leading wire" and thus provide antecedent basis for the term "leading wire".

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The same error is duplicated in claims 14, 24, and 28.

Regarding claim 2, the word “wherein” is duplicated in line 19 and should be deleted.

Regarding claim 7, the word “discontinuity” does not appear to have antecedent basis. It is assumed for the purposes of examination that the “separation” disclosed in claim 2 is the discontinuity referred to in claim 7.

Regarding claim 22, the term cranked does not appear to be properly defined in the specification. It is assumed applicant is referring to the shape of applicant’s figure 6 however the term should be explicitly defined either in the claim or specification.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 4, 18, and 21 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for either the front electrode or the back electrode being connected to an auxiliary electrode outside of the display area, does not reasonably provide enablement for both the front and back electrodes being connected to the same auxiliary electrode outside of the display area. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

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Claims 1, 4, 5, 6, 8, 10, 12, 20, 22, and 23 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically there is no disclosure directed to the establishment of a discontinuity that would be adjacent to the metal electrode where adjacent is defined as next to or adjoining the metal electrode. The discontinuities disclosed in the specification are provided interior to the metal electrode and separate the electrode into a first and second part.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Regarding claim 5, claim 5 recites the limitation "the metal auxiliary electrode is provided to said leading wiring of the front electrode", these limitations render the claim indefinite, since where a claim directed to a device can be read to include the same element twice, it is considered indefinite. See MPEP §2173.05(o). In this specific case it is unclear how this recitation distinguishes itself from the recitation of claim 1 where the metal auxiliary electrode is the leading wiring laminated on the transparent electrode outside the display area. Specifically if the transparent electrode is the front electrode and the first claim establishes that the metal auxiliary electrode is the leading wire connected to the front electrode then it is unclear how the metal auxiliary electrode is provided to the leading wiring of the front electrode.

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Regarding claims 19 and 21 the claims are rejected for the same reasons as disclosed in the rejection of claim 5 above.

Claim Rejections - 35 USC § 102

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 2, 11, 13, and 24 are rejected under 35 U.S.C. 102(e) as being anticipated by Fleming et al. (US 6,111,357).

Regarding claims 2 and 24, Fleming discloses (see figures 1a and 1c) an organic display panel including a transparent substrate (12), a transparent electrodes (14) formed on the substrate, an organic EL layer (16) formed on the transparent electrodes, a second group of electrodes (18) formed on the opposite side of the organic EL layer, metal auxiliary electrodes (20) extending from the transparent electrodes, and a seal (44) that encircles the display area and is fixed to the transparent substrate. (Column 6 lines 41-53) and (Column 7 lines 1-25, and 39-49). Further (see figure 6c) the metal auxiliary electrodes include a number of locations (29), formed on the bonded portion of the metal electrodes, which cross the metal auxiliary electrodes and which are non-continuous in the longitudinal direction. (Column 10 lines 41-45). Fleming further discloses the use of a pair of metal auxiliary electrodes (see figure 1c). As defined in the specification (Page 12 lines 23-27), a pair of metal auxiliary electrodes includes an electrode formed inside the sealing portion and a portion formed outside the sealing portion. In this case the first electrode (22) is formed inside the sealing portion (24) and the second electrode (26) is

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formed outside the sealing portion. The two electrodes are joined but separated by the portion, 24, of the electrode at the sealing portion. (Column 7 lines 61-67).

Regarding claim 11, Fleming further discloses the use of a UV radiation curable adhesive for the bonding of the leading wiring and the sealing member. (Column 9 lines 5-15).

Regarding claim 13, Fleming further discloses the use of multiple layers forming the organic EL medium. (Column 6 lines 26-27). Additionally Fleming discloses the various combinations of traditional organic EL devices to be used in the device as claimed. Included in those incorporated references is Tang (US 4,356,429) in which an organic luminescent layer and a hole transport layer are used as the layers of the organic EL medium. Therefore the Fleming reference anticipates the use of the organic luminescent layer and a hole transport layer in the organic EL device as described in the rejection of claim 1 and 2 above.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3, 7, 9, 25, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fleming et al. (US 6,111,357).

Regarding claims 3 and 25, Fleming discloses the device as claimed (see rejections of claims 2 and 24 above) but does not appear to specify the use of electrodes in a pair on either side of the bonding part where the electrodes are longer than the width of the leading electrode.

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However the applicant fails to identify the use of auxiliary electrodes that are longer than the width of the leading electrode to solve any problem or yield any unexpected result that is not within in the scope of the teachings relied upon. Further the varying of the length of the electrode to enhance to electrical characteristics of the joint between the auxiliary electrodes and the transparent electrode is well known in the art of organic EL devices. Additionally limiting the length to a lower bound to enhance display characteristics is also well known. Thus varying the length of the electrode both longer and shorter than the disclosed length is well known in the art to either improve the electrical connection or improve the transparency of the electrodes. It would have been an obvious design choice to one having ordinary skill in the art to use auxiliary electrodes that are longer than the width of the leading electrode in the organic display device as disclosed by Fleming, since such a modification would involve a mere optimization of the length of the auxiliary electrodes.

Regarding claim 7, Fleming discloses the device as claimed (see rejections of claim 2 above) but does not appear to specify the area of the exposed transparent electrode in the sealing portion being between 50% to 90% of the whole area of the bonded part. However the applicant fails to identify the use of the area of the exposed transparent electrode in the sealing portion being between 50% to 90% of the whole area of the bonded part to solve any problem or yield any unexpected result that is not within in the scope of the teachings relied upon. Further it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In this case Fleming teaches modification of the metal lines with respect to the variables of the organic EL device in order to provide sufficient transparency to cure the resin and enough line width to allow for

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suitable conductivity. (Column 13 lines 35-40). It would have been an obvious design choice to one having ordinary skill in the art to incorporate the area of the exposed transparent electrode in the sealing portion being between 50% to 90% of the whole area of the bonded part to the organic EL device as disclosed by Fleming, since such a modification would involve a mere optimization of the area where the transparent electrode is visible through the auxiliary electrode and since optimization of workable ranges is considered within the skill of the art.

Regarding claim 9, Fleming discloses the device as claimed (see rejections of claim 2 above) but does not appear to specify the use of a resistance value of the leading wiring to be 30 Ohms or less. However the applicant fails to identify use of a resistance value of the leading wiring to be 30 Ohms or less to solve any problem or yield any unexpected result that is not within in the scope of the teachings relied upon. Further it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In this case Fleming teaches modification of the metal lines with respect to the variables of the organic EL device in order to provide sufficient transparency to cure the resin and enough line width to allow for suitable conductivity. (Column 13 lines 35-40). It would have been an obvious design choice to one having ordinary skill in the art to incorporate the use of a resistance value of the leading wiring to be 30 Ohms or less to the organic EL device as disclosed by Fleming, since such a modification would involve a mere optimization of the area of the auxiliary electrode compared to the holes formed therein and since optimization of workable ranges is considered within the skill of the art.

Regarding claim 25, Fleming discloses the device as claimed (see rejection of claim 24 above) but does not appear to specify the use of electrodes in a pair on either side of the bonding

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part where the distance separating electrodes of a pair is smaller than the distance separating a first electrode from a second electrode opposite the bonding portion of the first electrode and on a adjacent line. However the applicant fails to identify the use of electrodes in a pair on either side of the bonding part where the distance separating electrodes of a pair is smaller than the distance separating a first electrode from a second electrode opposite the bonding portion of the first electrode and on a adjacent line to solve any problem or yield any unexpected result that is not within in the scope of the teachings relied upon. Further the varying of the distances between the paired electrodes and the adjacent electrodes is well known in the art to enhance electrical characteristic and specifically to ensure against emission between adjacent lines. Thus it would have been an obvious design choice to one having ordinary skill in the art to use electrodes in a pair on either side of the bonding part where the distance separating electrodes of a pair is smaller than the distance separating a first electrode from a second electrode opposite the bonding portion of the first electrode and on a adjacent line in the organic display device as disclosed by Fleming, since such a modification would involve a mere change in the distance separating the adjacent lines.

Allowable Subject Matter

Claims 14, 16, 27, and 28 are objected to but would be allowable if the objections were overcome.

As allowable subject matter has been indicated, applicant's reply must either comply with all formal requirements or specifically traverse each requirement not complied with. See 37 CFR 1.111(b) and MPEP § 707.07(a).

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The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 14, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 14, and specifically comprising the limitation of an organic EL device including metal auxiliary electrodes connected to a transparent front electrode where the auxiliary electrodes includes at least one discontinuity that extends the full width of the metal auxiliary electrode at the bonded part of the electrode and the substrate at a sealing portion.

Regarding claims 16 and 27, claims 16 and 27 are allowable for the reasons given in claim 14 because of their dependency status from claim 14.

Regarding claim 28, the references of the Prior Art of record fails to teach or suggest the combination of the limitations as set forth in claim 28, and specifically comprising the limitation of an organic EL device including metal auxiliary electrodes connected to a transparent electrode formed outside of the sealing area where the auxiliary electrodes includes at least one opening in the bonding area and a front electrode does not extend past the sealing area.

Response to Arguments

Applicant's arguments filed 10/15/2003 have been fully considered but they are not persuasive.

Regarding applicants claim that the new claims are not met by the previous rejection since the new claims specify the use of a gap spanning the full width of the metalized leader, examiner respectfully disagrees. With respect to amended claim 2 and new claim 24, the

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examiner believes that a gap extending the full width of the leader has not been sufficiently claimed to overcome the prior rejection.

Further examiner believes that after amendment additional objections and rejections exist with respect to the claim language and that not all of the previous rejections were overcome.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Nagase et al. (US 6,344,661) discloses the use of various bonding part patterns in the sealing portion of the auxiliary electrode and the transparent electrode.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


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Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matt P Hodges whose telephone number is (571) 272-2454. The examiner can normally be reached on 7:30 AM to 4:00 PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (571) 272-2457. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7382 for regular communications and (703) 308-7382 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

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